

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 27.—M. Faye in the chair.—On Egyptian gold, by M. Berthelot. Analyses of specimens of gold of different epochs show that at the time of the sixth and twelfth Egyptian dynasties the art of separating the silver from native gold was not known. Some gold leaf of the Persian epoch was pure, the silver having been separated. As, however, there is a period of about twelve centuries between the dates of the last two specimens analysed, specimens of intermediate dates must be examined if the date of this metallurgical discovery is to be fixed.—Observations of the comet 1900 *b* (Borelly-Brooks) made with the large equatorial of the Observatoire de Bordeaux, by MM. G. Rayet and A. Ferand. The nucleus of the comet on July 31 was of about the 9th or 10th magnitude, the head having a diameter of 3' to 4' of arc.—The apparent semi-diameter of the sun and its position relative to the moon, deduced from the eclipse of May 28, by MM. Ch. André and Ph. Lagrula. The final result for the apparent semi-diameter of the sun is given as 15' 59".24 ± 0".30.—On an anomaly of the dichotomous phase of the planet Venus, by M. E. Antoniadi. The edge of the planet is always more brilliant than the central regions; thence irradiation ought to produce the prolongations actually observed. The phenomenon would thus appear to be of purely physiological origin.—Dielectric cohesion and explosive fields, by M. E. Bouty. The term explosive field is applied to the minimum strength of field between two nearly plane electrodes required to produce sparking. The curves relating to critical fields, as described in a preceding note, show many analogies with those of explosive fields. Thus both the critical and explosive fields are linear functions of the pressure of the gas, and the constants for the gases hydrogen, air and carbonic acid are arranged in the same order of magnitude.—On the composition of the combinations obtained with fuchsine and the sulphonated azo-colouring matters, by M. Seyewetz.—On lighting by the cold physiological light called living light, by M. Raphael Dubois. By the growth of certain microorganisms in suitable media, details of which are given, a room may be illuminated with an intensity about equal to moonlight.—Action of the total pressure upon the assimilation by chlorophyll, by M. Jean Friedel. Although the influence of the partial pressure of the carbon dioxide in the atmosphere upon chlorophyll assimilation has been well investigated, the effect of changing the total pressure of the air has not yet been examined. It was found that the lowering of the total pressure, even to ¼ atmosphere, does not modify the nature of the chlorophyll assimilation, but that its intensity diminishes in a regular manner with the pressure. Four species of plants were used, and the numbers obtained for the variations were of the same order in all of them.—On the ancient extent of the glaciers in the region discovered by the Belgian Antarctic Expedition, by M. Henryk Arctowski.

CAPE TOWN.

South African Philosophical Society, August 1.—L. Péringuey, President, in the chair.—The secretary read a second report on the mud island which appeared off Pelican Point at the beginning of June, from Mr. Cleverly, R.M., Walfish Bay, and showed the photographs taken by Mr. Waldron, Public Works Department. Mr. Cleverly reported that the island no longer existed on June 7, it having then entirely subsided, as, on steaming over the site, soundings of six and seven fathoms were obtained. The sea was much discoloured, and a distinct odour of sulphur was still to be distinguished. Small quantities of dead fish were found on Pelican Point, but this is a not unusual occurrence. About the time of the island's appearance heavy rollers set in along the coast, and though these did not affect Walfish Bay, thirty yards of the new breakwater at Swakop Mouth were totally destroyed, a derrick carried away, and two men drowned. Though these rollers are usually experienced on this coast in the winter months, Mr. Cleverly understands that the engineer in charge at Swakop Mouth had set up a theory that the damage to his works resulted from an earthquake wave, and that he pointed to the appearance of the mud island at Walfish Bay in support of his theory, but in Mr. Cleverly's opinion the cause of the upheaval must have been extremely local as no disturbance whatsoever was felt at the settlement or in the confined waters of Walfish Bay. Mr. Waldron, on the invitation of the president, gave an account of

his visits to the island. It was visited on June 1, 2 and 4. At the next visit, on June 7, there was no island. On June 1 one member of the party landed and noticed a small basin-shaped hollow containing water and emitting gas bubbles. The odour was distinctly that of sulphuretted hydrogen. Dr. Corstophine agreed with Dr. Marloth as to there being no need for volcanic activity to explain the phenomenon; nor was there any evidence of such. He compared the appearance of the island at Walfish Bay with the "mud lumps" known to arise in the Gulf of Mexico, and quoted Sir Charles Lyell's account of these. The Walfish Bay island was evidently a quite similar phenomenon. As to the gas, the Gulf of Mexico "mud lumps" usually gave off marsh-gas, and the sulphuretted hydrogen perceived as being emitted at Walfish Bay, was probably due to the decomposition of animal as against plant material. The fine mud from Walfish Bay, under the microscope, was found to contain diatoms, fish scales, bones, and other remnants of animal matter.—Notes on stone implements of palæolithic type found at Stellenbosch and the vicinity, by L. Péringuey and G. S. Corstophine. The discovery of stone implements of a particularly ancient type at Bosman's Crossing, Paarl and Malmesbury, was described. From the rude character of the chipped stones, Mr. Péringuey was disposed to regard them as being equal in age to the palæolithic implements of Europe, but Dr. Corstophine had shown him the difficulty of accepting this theory owing to the geological deposits in or on which the stones are found. So far no implements have been found in any deposit that can be regarded as of great antiquity. In the Stellenbosch district the implements are found imbedded either in the rain-wash of weathered granite or in the laterite, or simply on the surface, so that no geological evidence has yet been discovered as to the presumable antiquity of the implements. One feature of this occurrence, which Dr. Corstophine pointed out, is that as yet no implements have been found on the recent alluvial terraces of the Eerste River, but only on the hill slopes round about. The implements are formed from water-worn boulders of Table Mountain Sandstone, and often retain a considerable portion of the water-worn surface.

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